CONTENTS

PAGE

STEWART, R. R., ADAMS, W. B. AND NICHOLLS, J. G. Presynaptic calcium currents and facilitation of serotonin release at synapses between cultured leech neurones . . . 1

RÜPPELL, G. Kinematic analysis of symmetrical flight manoeuvres of Odonata 13

NAKAJIMA, KANAME AND NAKAOKA, YASUO. Circadian change of photosensitivity in *Paramecium bursaria* 43

PRESTWICH, KENNETH N., BRUGGER, KRISTIN E. AND TOPPING, MARY. Energy and communication in three species of hylid frogs: power input, power output and efficiency 53

BÜSCHGES, ANSGAR. Processing of sensory input from the femoral chordotonal organ by spiking interneurones of stick insects 81

LAUGHLIN, SIMON B. AND OSORIO, DANIEL. Mechanisms for neural signal enhancement in the blowfly compound eye 113

WECKSTRÖM, M., KOUVALAINEN, E., DJUPSUND, K. AND JÄRVILEHTO, M. More than one type of conductance is activated during responses of blowfly monopolar neurones 147

LUTZ, PETER L., BERGEY, ANN AND BERGEY, MICHAEL. Effects of temperature on gas exchange and acid–base balance in the sea turtle *Caretta caretta* at rest and during routine activity 155

NICOLSON, SARAH W. AND LUTZ, PETER L. Salt gland function in the green sea turtle *Chelonia mydas* 171

SCHUSTER, STEFAN. The volume of air within the swimbladder and breathing cavities of the anabantoid fish *Colisa lalia* (Perciformes, Belontiidae) 185

CRUSE, H. AND KNAUTH, A. Coupling mechanisms between the contralateral legs of a walking insect (*Carausius morosus*) 199

WOOD, CHRIS M., MUNGER, R. S. AND TOEWS, D. P. Ammonia, urea and H^+ distribution and the evolution of ureotelism in amphibians 215

PEARSON, K. G., HEDWIG, B. AND WOLF, H. Are the hindwing chordotonal organs elements of the locust flight pattern generator? 235

DELLER, SIMON R. T. AND MACMILLAN, DAVID L. Entrainment of the swimmeret rhythm of the crayfish to controlled movements of some of the appendages. 257

MACMILLAN, DAVID L. AND DELLER, SIMON R. T. Sensory systems in the swimmerets of the crayfish *Cherax destructor* and their effectiveness in entraining the swimmeret rhythm 279

TRIMMER, BARRY A. AND WEEKS, JANIS C. Effects of nicotinic and muscarinic agents on an identified motoneurone and its direct afferent inputs in larval *Manduca sexta* . 303

EVANS, DAVID H., MORE, KANE J. AND ROBBINS, STEVEN L. Modes of ammonia transport across the gill epithelium of the marine teleost fish *Opsanus beta* 339

SCHELLART, NICO A. M. AND RIKKERT, WALTHER E. I. Response features of visual units in the lower midbrain of the rainbow trout 357

GLEESON, TODD T. AND DALESSIO, PAULA M. Lactate and glycogen metabolism in the lizard *Dipsosaurus dorsalis* following exhaustive exercise 377

CUTHBERT, BRIAN A. AND EVANS, PETER D. A comparison of the effects of FMRFamide-like peptides on locust heart and skeletal muscle 395

TAYLOR, E. W. AND WHITELEY, N. M. Oxygen transport and acid–base balance in the haemolymph of the lobster, *Homarus gammarus*, during aerial exposure and resubmersion 417

Contents

PAGE

LANGFELD, KAREN S., ALTRINGHAM, JOHN D. AND JOHNSTON, IAN A. Temperature and the force–velocity relationship of live muscle fibres from the teleost *Myoxocephalus scorpius* 437

WAFFORD, K. A. AND SATTELLE, D. B. L-Glutamate receptors on the cell body membrane of an identified insect motor neurone 449

COSSINS, ANDREW R. AND KILBEY, ROBERT V. The seasonal modulation of Na^+/H^+ exchanger activity in trout erythrocytes 463

MALAMUD, JEAN G. The tension in a locust flight muscle at varied muscle lengths . . . 479

PELSTER, B., KOBAYASHI, H. AND SCHEID, P. Metabolism of the perfused swimbladder of the European eel: oxygen, carbon dioxide, glucose and lactate balance 495

PERRY, STEVE F. AND WALSH, PATRICK J. Metabolism of isolated fish gill cells: contribution of epithelial chloride cells 507

STANTON, TIMOTHY S., GLAHN, RAYMOND P. AND WIDEMAN, ROBERT F., JR. The effects of dietary phosphorus and parathyroid hormone (PTH) infusion rates on the avian phosphaturic response to PTH 521

LAPIED, BRUNO, MALÉCOT, CLAIRE O. AND PELHATE, MARCEL. Ionic species involved in the electrical activity of single adult aminergic neurones isolated from the sixth abdominal ganglion of the cockroach *Periplaneta americana* 535

ADAMS, BRETT A. Temperature effects on membrane chloride conductance and electrical excitability of lizard skeletal muscle fibres 551

TUFTS, B. L. AND BOUTILIER, R. G. The absence of rapid chloride/bicarbonate exchange in lamprey erythrocytes: implications for CO_2 transport and ion distributions between plasma and erythrocytes in the blood of *Petromyzon marinus* 565

SHORT COMMUNICATIONS

SCHOFIELD, ROBERT AND LEFEVRE, HARLAN. High concentrations of zinc in the fangs and manganese in the teeth of spiders 577

KORMANIK, GREGG A. Nitrogen budget in developing embryos of the spiny dogfish *Squalus acanthias* 583

INFORMATION ABOUT THE JOURNAL